

360° Video Made Easy

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360° Basics

Overview of 360°

The kind of 360° video we're doing is monoscopic capture, using a stitched image from two lenses—one for each view, that allows for the viewer to freely move the nodal camera (look around the scene from the camera's central point of view). They can't move within the virtual space but they can look around in all directions. This is in contrast to stereoscopic 360°, which allows for depth, using two lenses for each directional view, to simulate stereoscopic human vision. This involves a much more demanding process of ingest and stitching.

Overview of workflow

- Plan
- Film
- Transfer
- Stitch
- Edit
- Add Metadata
- Upload
- Watch

Most of these steps are the same as for traditional video projects. The only real differences, besides the 360° format itself, are stitching and adding metadata.

Plan

Planning / Storyboarding

Make a plan for your shoot. It can be simple or highly detailed.

- Equipment
- Location
- People
- Shots

Storyboarding is one way to keep track of shots and sequence.








Storyboarding resources:

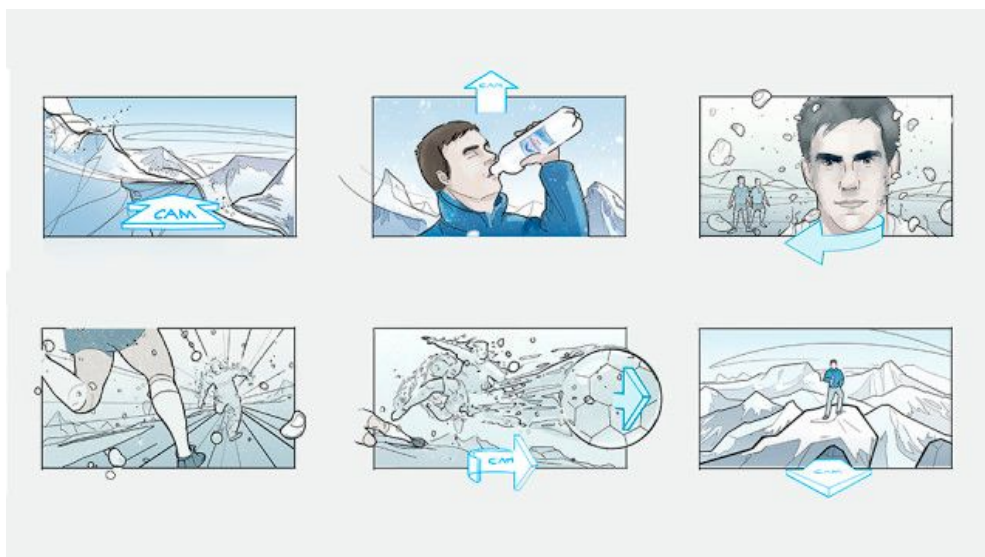
<http://www.brianlemay.com/Pages/animationschool/storyboarding/storyboarding%20basics.html>

<https://www.videomaker.com/article/f2/15415-how-to-make-a-storyboard-storyboard-lingo-techniques>

Simple storyboarding templates:

<https://www.sampletemplates.com/business-templates/free-storyboard-templates.html>

Page No. _____	Scene _____	Production _____	Story Artist _____
			
			

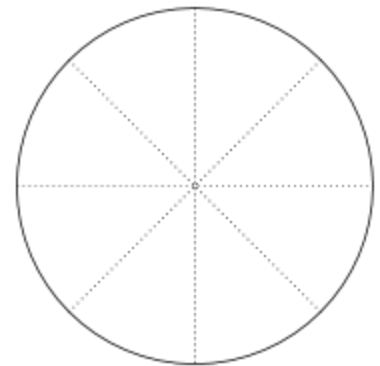
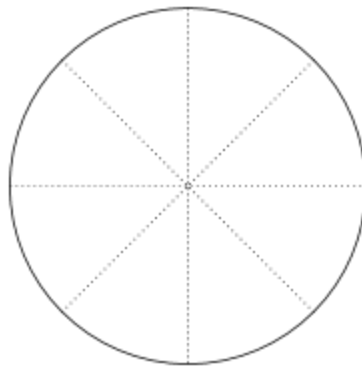
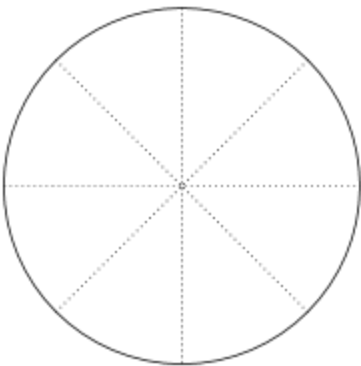
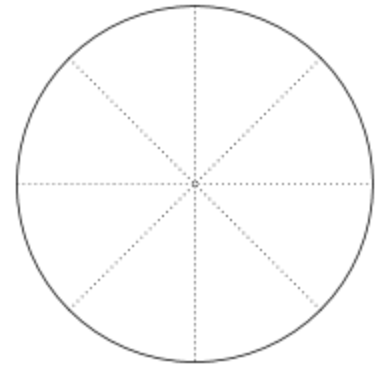
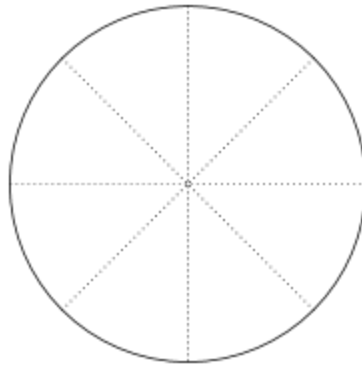
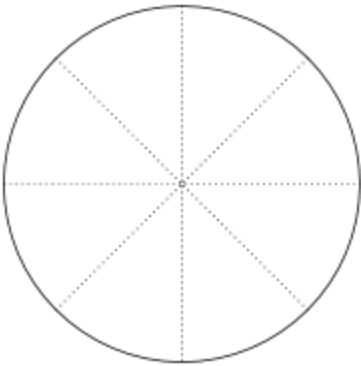


<http://www.anjavonharsdorf.com/category/storyboard/>

Storyboarding in 360

What does composition mean when everything is in frame? You still want to think about position of actors and action and using the control you have to best present your story. Camera position and movement can do a lot.

Page No. _____ Scene _____ Production _____ Story Artist _____ Date _____



Film

Theta S Camera

Specs: <https://theta360.com/en/about/theta/s.html>

User guide: <https://theta360.com/en/support/manual/s/>

App downloads: <https://theta360.com/en/support/download/>

Start

- Press power button on the side of the camera to turn on the camera.
- Press the still/video selector button on the side to select the video function. The video icon will appear as a blue light on the front side of the camera.

Direct use

Like with a normal video camera, press the shutter button on the “Ricoh” side of the camera to start recording. You will be in the video pressing the button, but you can edit it out later. Press the same button to stop recording.

App control

Use the free Theta app to preview the shot, start/stop recording, adjust settings, share files, and delete files. This is less helpful for video, since you cannot adjust shooting settings for video, but the app does allow you to view your clips in 360 on your phone.

- Download the app from <https://theta360.com/en/support/download/>
- Turn on the camera’s wifi by pressing the wifi button on the side of the camera.
- Log onto the Theta’s wifi from your phone, it will be called “THETAXS00202581” or similar, based on the serial number of the camera. The serial number is located on the bottom of the camera. The password is the serial number after letter “S” so for this camera it would be “00202581”.
- Open the app.
- Choose “Shooting”.
- Choose the Video camera logo.
- Capture video by pressing round Theta button.
- Stop recording by pressing the button again.

Preview movie on phone

Transfer to phone to view. This can take some time depending on the length of the video.

Best practices for 360

Where to stand, etc.

<https://www.facebook.com/facebookmedia/best-practices/facebook360>

<https://fb360video.files.wordpress.com/2015/11/360-degrees-best-practices-for-immersive-storytelling.pdf>

<https://wistia.com/blog/360-video-shooting-techniques>

Tripods: mono vs. regular

Transfer Files to Computer

- Plug in Theta using a micro usb to usb cable.
- Don't use the Photos app on Mac: use Image Capture.
- Rename your clips with descriptive names.

Stitch

The file coming from the camera has two separate wide angle videos.



They need to be “stitched” together to be viewed as a complete picture.

Drag the .MP4 file into the [Theta stitching app](#). Its icon looks like this:



The app will stitch the two videos together and create an equirectangular file (2:1 aspect ratio). The stitcher will add “_er.MP4” at the end of the new file, and will save it in the same location as the original .MP4 was.

The stitched file will then open in the Theta app and will appear spherically. It can be viewed in 360° by dragging with the cursor. If you look at it outside of the viewer, it will be in equirectangular format:



You can upload directly to youtube if you don't want to edit your movie. Instructions here: <https://theta360.com/en/howto-youtube/>

Edit

We'll use iMovie to edit the video. There are more specialized 360 editing tools available but iMovie does a good job and is relatively simple to use.

Workflow:

- Ingest _er.mp4 equirectangular files
- Edit much like standard videos.
- Output .mp4 file

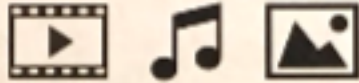
let's make videos that don't suck - basic editing

1 Give yourself a lot of time.

2 Organize your content before you start editing.

3 Drag video clips into the timeline. You can cut them into smaller clips before or after.

Content Library



Titles | Backgrounds | Transitions

Editing Tools

Preview Window



overlapping content

titles

main content

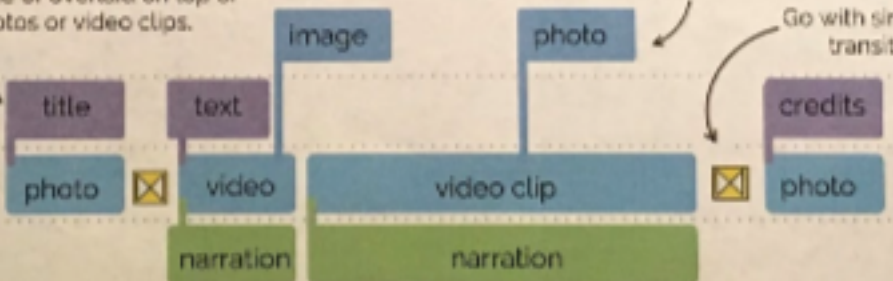
audio/narration

background music

Titles can be their own slide or overlaid on top of photos or video clips.

Overlay photos by dragging them into the timeline.

Go with simple transition



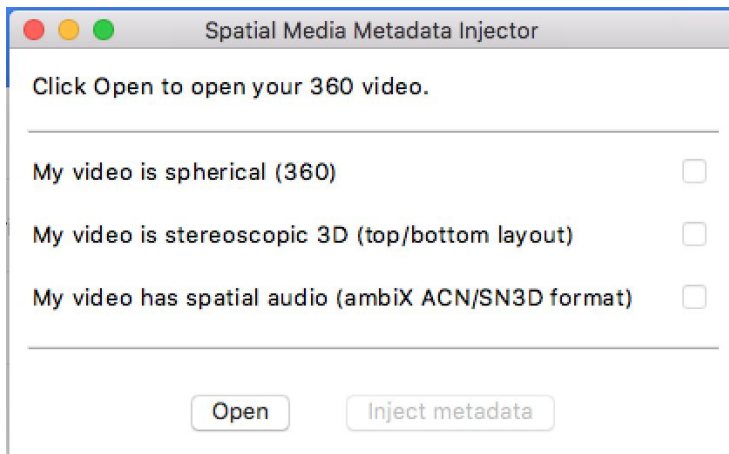
Shanti Freundlich | MCPHS University

Editing summary guide courtesy of Shanti Freundlich, MCPHS University

Add 360° Metadata

We need to add 360° metadata to the video file in order for the video to be rendered spherically on the web, otherwise it will play on Youtube in the equirectangular mode. There is a free app for that.

- Download and install the 360° Video Metadata Injector app for [Mac](#) or [Windows](#).
- Open the app and this small dialog box will appear:



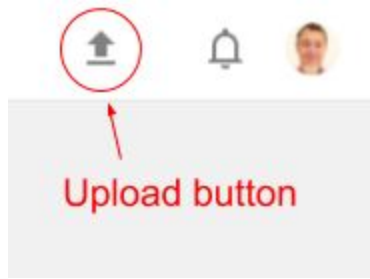
- Click "Open" to choose which video to inject with 360° metadata.
- Make sure the box is checked for "My video is spherical (360)."
- Click "Inject metadata."
- The injected file will be saved in the same spot as the original and will now have "_injected.mp4" in the file name.

Here is the full Youtube 360° instruction page:

<https://support.google.com/youtube/answer/6178631?hl=en>

Upload to Youtube

- Sign in to your Youtube account.
- Go to your "Creator Studio."
- Click on the upload button at the upper right corner, near the user photo.



- Follow the prompts to drag in, or search and select, your video. Youtube will begin uploading and processing the video. The time this takes depends on the length of your video and the speed of your internet connection. While it uploads and processes you can fill in some information.

Select *public*, *unlisted*, or *private* video.

Public videos and playlists can be seen by and shared with anyone.

Private videos and playlists can only be seen by you and the users you choose.

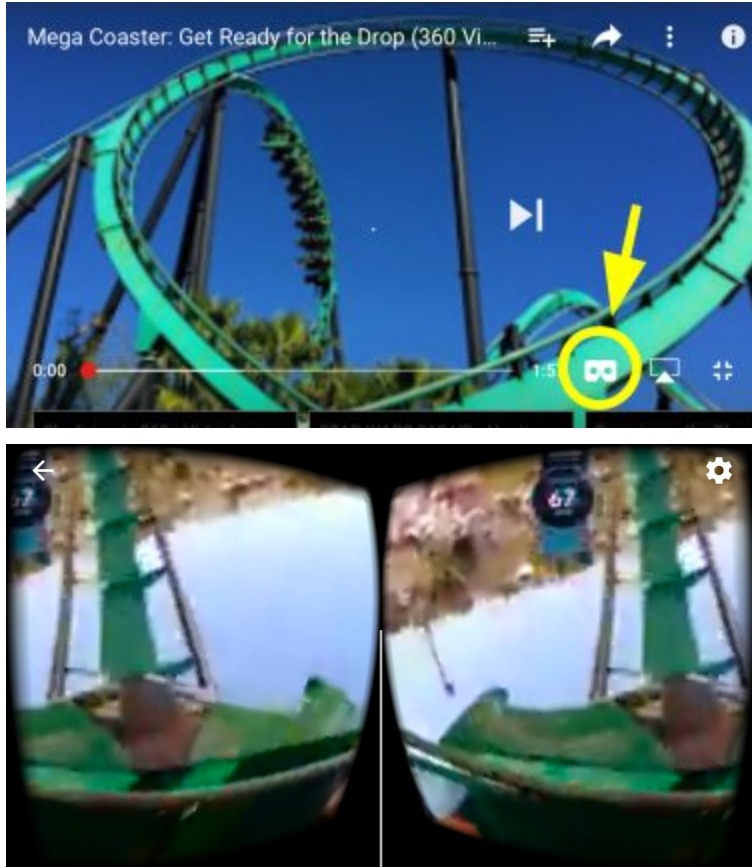
Unlisted videos and playlists can be seen and shared by anyone with the link.

- Add description and tags, etc.
- Click on “Publish” to finish.
- Youtube will display the URL for the video.

It can take up to an hour for the video to be playable in 360°. During that time, it will appear as equirectangular.

Watch

Once it's on Youtube you can access the video from the internet. To watch 360° videos, you need the latest version of Chrome, Opera, Firefox, or Internet Explorer on your computer. The video will appear in the same frame as a normal video, but you can click and drag with the mouse to change the portion of the scene that is displayed. On mobile devices, use the latest version of the Youtube app (using Youtube through a browser on a phone does not support 360° viewing, you must use the Youtube app). The view will change as you move the device around you in space. The video will also be viewable in Google cardboard type viewers. Select cardboard view by touching the cardboard icon and the display will switch to stereo.



Watch 360° video in Cardboard: <https://support.google.com/youtube/answer/6239930?hl=en>

You can also watch 360° videos on virtual reality systems like HTC Vive and Oculus Rift. There are various apps and interfaces for doing so depending on your system.

Watch YouTube in VR:

https://support.google.com/youtube/topic/7206268?hl=en&ref_topic=7293945

Other Resources

Free 360 viewer app from Kolor and GoPro: <http://www.kolor.com/gopro-vr-player/download/>

Nadirpatch.com free logo insert/nadir patch (for stills).

How to video: https://www.youtube.com/watch?v=QCFp5_b2zQg

How to video for creating nadir patch in Photoshop:

<https://www.youtube.com/watch?v=GRdLxf-LRBQ>

Good overview of 360°:

<https://medium.com/capitalonedesign/360-filmmaking-for-designers-8ddacd448894#.rzxm563ub>